Exhibit AD

SUPERIOR COURT OF NEW JERSEY
LAW DIVISION - MIDDLESEX COUNTY
DOCKET NO. MID-L-003809-18AS

KAYME A. CLARK and DUSTIN W. CLARK, Plaintiffs, v. JOHNSON & JOHNSON, et al., et al., Defendants.	104 HEARING TRANSCRIPT OF PROCEEDINGS (VOLUME I)

Place: Middlesex County Courthouse
56 Paterson Street
New Brunswick, New Jersey 08903

Date: May 29, 2024
9:02 a.m.

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but let's first do TEM because it's fairly quick.
So if we then go to slide 12, these are -- the things below are not chrysotile, they're amphibole. But within of the things that TEM can do is if you find a particle and you want to know is it talc, is it chrysotile, it can provide you detailed information on chemistry and on crystal structure to identify the proper mineral, correct?
A. Correct.
Q. Okay. In fact, you have said if you use a TEM, if you choose to use a TEM, it is fairly simple to tell whether or not you are, in fact, looking at chrysotile as opposed to talc, right?
A. Correct.
Q. Okay. And now let's talk about PLM and the additional dimension that adds and how it can then be manipulated as we'll eventually say by an analyst.
Before I get there, though, I want to just talk a little bit about your PLM qualifications. Okay? And so, slide 13.
Fair to say that as of 2019, which is right before you started to issue reports claiming to find chrysotile in Johnson & Johnson, you said that you personally do not do PLM analysis?

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A. That's correct.
Q. And, in fact, you said that as of 2019 you had never analyzed a sample of talc for the presence of asbestos from start to finish using PLM, correct?
A. Correct.
Q. And at least as of 2023, when we last asked you, you said you had never taken any classes in the type of PLM analysis we're going to be talking about which is referred to as PLM dispersion staining, not a single class, right?
A. No, sir.
Q. So, it's correct you didn't take a class, right?
A. Never taken a class in PLM analysis to understand how to identify asbestos in asbestos-added products.
Q. You are a self-taught PLM analysis -- analyst, right?
A. Yes, sir. I don't want to sound, you know, braggadocios, but I have a Ph.D. in material science and engineering where you know everything about every type of microscope, et cetera, and typically Ph.D. levels don't take basic PLM classes. I know the science really well on PLM. I could

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analyze those samples but it would take me all day so I don't do it.
Q. Okay. We'll talk more about that a little bit later but...
And if we look at the reports in which MAS has claimed to find chrysotile in Johnson & Johnson, you can see the names of the people who actually did the analysis, right?
A. Correct.
Q. And you are never listed as the analyst?
A. Well, the only people that is listed as the analyst is the person that goes from start to finish. When I sit down or there's a structure that there's some debate on it and I sit down and look at it and go through it, I don't put my name down for one structure. That's not fair.
Q. Okay. But, again, the analyst would typically be somebody like a Paul Hess, right?
A. Correct.
Q. Okay. But you, I think you just said you feel comfortable answering questions today about PLM dispersion analysis and how it's done at MAS, right?
A. Yes, sir.

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Q. Great.
So, let's just start talking about the differences. We've already said it's a fairly simple matter to identify chrysotile with TEM. I want to talk a little bit about how to identify minerals using PLM dispersion staining. First, we're just going to walk through a bit of the process before eventually we're going to start looking at your images in light of what we have discussed. Okay?
And so, if we just remind ourselves first, slide 1 'cause we're going to be talking about one of these topics and I think you agreed with it. 3, PLM analysis starts with the analyst picking the right color and I think you agreed with that, right?
A. I agree.
Q. So, I want to start to explain how this works, anybody who's sort of following along from the gallery don't worry, we're going to be going back in each concept multiple times. All right. And we can start out a little bit looking at slide 15 as an example. And I think we were going to introduce as, I guess it's Defense 2, just a copy of the ISO standards that will be D-2, from which

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some of this will be drawn. Thank you.
MR. DUBIN: Would Your Honor -- do you want a copy?
THE COURT: No, I don't need one, but thank you.
MR. DUBIN: No problem.
THE COURT: Is D-2 a combination of standards or one standard?
MR. DUBIN: It should be one standard, Your Honor.
BY MR. DUBIN:
Q. So, we're going to be talking a good bit about what colors you should see under a microscope for chrysotile, what colors you're calling things. I don't want to get there yet. I just want to talk about the process. Okay?
And so, what we're looking at here is an image in parallel, and we'll talk about why that's significant, of ISO reference chrysotile in 1.550 oil, right?
A. The 1866b NIST standard from Black Lake, Canada, Johns-Manville's source, yes.
Q. And so, again, just to talk about the process, and we'll talk more about this later, when you do this type of analysis, you have to select a

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refractive index oil, right?
A. Yes.
Q. And the colors of particles can be slightly different depending on which refractive index oil you use, right?
A. That is correct.
Q. So, we're going to be talking a lot about two different periods of your work but right now the refractive index oil that we're going to be focusing on is 1.550 and that's the oil that's used for this reference image, right?
A. Yes.
Q. Okay. And so, if we look at the steps that happen, let's assume I'm an analyst and I'm looking down the microscope and I see this structure, let me first ask you: What would you say, and we'll explain what this means, what the refractive index of this particle is based on looking at it?
A. I would say the majority of what we're looking at is in the 1.556 1.557 range and people always call it magenta.
Q. Okay.
A. For a big bundle of chrysotile like this, that's not surprising.

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Q. Okay. But if we go to the next step, just so you understand the process, slide 17 -- sorry, actually, it's slide 16 first.
So what the analyst will do is they will observe the particle under the microscope in the refractive index oil and they will determine what color they say they are seeing, right?
A. Correct.
Q. And then the next step on a very basic level, if we go to slide 17, is that that particular color will be associated with a wavelength of light, right?
A. Yes.
Q. And so, here if we take that sort of magenta-y color, that would be approximately 540 nanometers if you're converting it into a wavelength of light, right?
A. Yeah, 540, 530, right around there.
Q. Okay. And we can show which it is but the next thing you do, the next step, if we go to slide 18, is that you take that wavelength of light and considering what oil you're using and temperature and things like that, you can then convert it into what's known as a refractive index number or RI number, right?

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A. Yes.
Q. Okay. And we're going to be working with those numbers a good bit today. And there is an image here of an individual, Dr. Su, and there are tables and methods that are used to perform this type of analysis that were developed by him, right?
A. This analysis?
Q. Yes, this kind of PLM dispersion staining analysis.
A. No. I would give the credit to Dr. Walter McCrone back in the early '70s.
Q. You use the Su tables as part of your analysis?
A. Yes. He gives them out when he audits your lab. So, we have them there. The analyst, especially Mr. Hess who's been doing this for, I don't know, 40 years, but we always use them because it's handy.
Q. Do you recognize Dr. Su in this courtroom?
A. I'm trying to remember the last time he came and audited our laboratory.
Q. I mean right there.
A. Right where?
Q. Right there. Can you please stand

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Q. Well, you and Dr. Su were at a conference and you didn't go and talk to him, right?
A. I never saw Dr. Su. I never knew he was there. So, yeah, if I saw Dr. Su, I would have asked him about it.
Q. And one of the things that you have criticized in Dr. Su's report is the idea that he manipulated your images or Photoshopped your images is one of the things you've said, right?
A. Yes, sir.
Q. And so, I want to look at those images and what he did and what his point was and then we'll talk about how it applies to your work. But first I just want to understand on a very basic level how illumination can impact color which then goes into your analysis by which you call the stuff you're finding chrysotile.
And so, let's just start first with slide 37 and I made these. I can't see how they look. So, I just took, I went and found some flowers on Amazon, if anybody likes them, you can -- I think it's 14.99 for Forget-Me-Nots, and blew up a little bit of the image of some of the flowers that are on the Amazon site.
And then if we go to slide 38, I just

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turned down the brightness a little bit on this and what we can see is that by reducing brightness on an image like this, you can start to turn lighter blues into darker blues and those would have, those two colors would have different refractive indices, right?
A. Yes.
Q. And you can also start yellows as it gets darker turning into or even if they were bright yellow, you can start seeing them turn into darker orange, right, for example the center of the flower on the bottom, right?
A. That's correct.
Q. And so, if we look at what Dr. Su was saying about your imaging and its effect on color and the effect on the analysis, we can go to page 6 or page 7 unless I have slides. Is that visible to everyone?
So one of the things that Dr. Su was pointing out is that in his view, you did not have appropriate or normal illumination of your images, right?
A. Well, that's -- you're right that's what he stated. He's wrong. I don't understand how he can make that decision in China when we're over

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in the United States never looking at the operative microscope. So, I just totally disagree what was going on here.
Q. Okay. So, the failing is that he doesn't have an opportunity to observe it through your microscope in your view, right?
A. We have never done anything but have it on full brightness.
Q. One of the things he did is he raised the illumination and the image and now, for example, and, again, these are the Gold Bond, we'll look at some J&J, but now, the yellows are brighter in parallel, right, and that's a typical color for talc in parallel, that brighter yellow, right?
A. I would agree.
Q. Okay. And the other thing that he talks about on the next page, page 7, is that just by raising the illumination to what he thought was an appropriate level, the dark blue particle that you're reporting on became a light blue particle in the illuminated image, correct?
A. That is correct.
Q. Okay.
A. You can do all kinds of stuff with Photoshop.

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Q. Well, again, so you're not saying that anything has been changed except for brightness level here, right?
A. That's a lot. You're taking evidence and you're molding it into what you want to see.
Q. Well, what he's pointing out is that in his view, this is what in normal illumination, what you should be seeing under the PLM, the brighter images, right?
A. Well, you keep saying "right." That's his opinion but you can't -- at least I always thought you can't take evidence and change it and say, gee, this is what it would have looked like if they did this with absolutely no evidence whatsoever that that's true.
Q. We're going to do the same thing with some other images in a second, but before we get there, let's show some evidence that it is true.
Okay. So, as we pointed out, you started looking at Johnson & Johnson for chrysotile in about, what, 2019 or late 2019 or early 2020?
A. Sometime in 2020.
Q. And your first report was the Zimmerman report, which we've already marked and looked at, right?

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And, again, so, the key thing is what does the analyst actually see here as opposed to what does he report the color is. Okay?

And so if we just go to the plain image, I guess let's make it an exhibit next. It's already an exhibit.

Let's just go to the plain image first, and it's PDF 3, it's something that's already in evidence, which is the 2023/02/28 Valadez report. What D number?

MR. HYNES: Eight.

MR. DUBIN: D-8, okay.

BY MR. DUBIN:

Q. Let's put just the image itself up first. Is there a way we can Zoom on that a little bit to make it easier to see?

Okay. And so, when I first asked you about this without using a color bar or without doing anything else, you told me that you were observing in this particle a brownish gold, correct?

A. Correct.

Q. Okay. But then you give some data here -- if we can scroll back up, we can see RIs. You give some data at the bottom and there's an RI number. You see it? You see RI 1564, right?

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A. Correct.

Q. And what you're able to do when you give us that piece of data is we can do an analysis in reverse to figure out what color your analyst was calling the particle. And so I just want to make sure we understand how that works in reverse. So let's start with slide 46. Actually, we can probably go to 47.

Okay. And so, for example, if you just give the RI which was 1564, we can consult the Su tables for the appropriate oil, and if we go to 4 -- I can't see -- if we go to 48, we've done this before, we can see that the color you're calling this is equivalent to the wavelength of light of 560, and if we go to slide 50, we can see that that color, the color that you are calling this particle for purposes of your analysis calling it chrysotile is this deeper purple, right?

A. It shows it on there but it's a blend. So that's where that should be -- should be in my opinion. There really is no purples I'm aware of. But that's where it falls. And I stick with it.

Q. And you stick with it because you've already admitted that if we go to, for example,

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slide 51 you have admitted that for purposes of your analysis calling this chrysotile, you have treated this particle in your analysis as if it is the circle color here, 1.564, right?

A. Yes.

Q. Okay. And I think we already -- you already agreed with me about what color reference chrysotile is on the wavelength, right, and that's a color corresponding to magenta, correct?

A. I haven't agreed with you --

Q. Do you agree --

A. -- other than it's an 1866b standard. You don't get magenta when you look at other -- what people say are chrysotile, such as the SG-210 or the RG144 at the smaller sizes, but for asbestos-added products I totally agree.

Q. I'm just asking what color it is. Let's do it more slowly then. Let's go back to slide 15.

And ISO gives refractive index values for these reference samples, right?

A. That's correct.

Q. And do you recall what the reference number is in parallel?

A. I do not.

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Q. I mean, we can just -- we've already marked ISO but do you recall it as 1.556. Otherwise, we can look back at ISO.

A. Okay.

Q. What?

A. I said okay.

Q. So, this is slide 19, we'll just call it up. It's already in. So they're reference values. So, ISO tells you what color it thinks that is, right?

A. Yes, for the 1866b.

Q. And so, it gives you this number 1.556, right, correct?

A. Correct.

Q. And if we look back at Longo slide 15, you can see that 1.556 corresponds to this magenta, right?

A. Yes, sort of magenta, I agree.

Q. And so, just comparing the two colors that you're calling this -- we can go to slide 54 -- you are claiming that this particle that you found in Johnson & Johnson that's on the left is more purple than standard reference chrysotile, right?

A. No, it's not more purple. It's just

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a blend of those colors. And you have to be looking under the microscope also to dial it in, but it's not magenta and has no relationship to these 1866bs.

Q. And, remember when we were talking before that one of the reasons why chrysotile has a low birefringence value, for example, is that purple is not that far from blue on the color chart, right; that's why chrysotile has a low birefringence, right?

A. It has a low birefringence because that's the way the crystal is designed.

Q. But if I'm looking at a yellow particle and I treat it as a purple particle, then I'm creating low birefringence?

A. No, we're not creating anything.

Q. Well, there's no dispute, though, for example, if we look at slide 55, that when you do this calculation, when you eventually do the birefringence calculation that you rely on, the input in one of the two numbers that you're using for that calculation for this particle will be based on the refractive index that's associated with that dark purple, right?

A. That brownish color, yes.

Q. Okay. And so whatever result you get

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in your birefringence calculation, it's going to be based on calling that particle purple?

A. We're not calling it purple. It's got a tint to it and you have to -- you have to know that the way these colors work on these crystals, you don't get exactly what those charts ever show. It's a blend, so I stick with it.

Q. And so, let's do some of the other particles. We can just do it more quickly. We can go to Longo slide 56.

This is your second particle or CSM 002 and, again, before I showed it to you on a color bar, you told me that it looked brownish gold, right?

A. Now that I'm looking close, I see some purple on the outer edge.

Q. But you also agree that the color that you're treating this for, so your refractive index you're giving us is 1.565 and if we back that out, the color that your analyst is calling this is somewhere between that 1.564 purple and the 1.566 magenta, right?

A. No, you have to -- it's hard to see it here, especially, you know, when you're reproducing it. But if you go to the outer edge

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that we looked at, that has the purplish color in it.

Q. Okay. And the next particle was 003. And if we look at that on a color chart, that's slide 57, so this is something you're calling chrysotile in your Valadez report, right?

A. Correct.

Q. And you're treating this in your analysis as if it is the circled color, 1.568, which is magenta, right?

A. If you look around the outer edge, that fibers there, that's what is being seen.

Q. Okay. But functionally you're basically saying that all of these particles in parallel match standard reference chrysotile?

A. No, I'm not saying that at all.

Q. You are treating them as the same color or more purple?

A. We're treating them that what it shows. Where if you're just taking the outer edge or the one where it's being, you know, refracted through the outer edge, then -- we started doing this after Dr. Bo Li was in our lab doing our last NVLAP and we were showing him this materials to look at and he said we should use the very, very last,

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you know, the very edge, fiber bundle, fibers on edge. But I'm not sitting at the microscope and this has been copied a few times, so it's kind of hard to debate you on it.

Q. Okay. So, slide 58, just so we can get the last particle, this is another particle that you're saying has a refractive index range of 1.565 to 1.568, so the circled range, again, treating this particle for your analysis as if it's magenta, right?

A. I wouldn't call it quite magenta, I'd call it more purple.

Q. And, I know one of the things that you've -- and you've mentioned it here, if we go back to slide 51 for a second, one of the things that you said and you tried to say is, well, sure, looks yellow, but I see some coloration around the edge and you said that again today, right?

A. Yes, sir.

Q. But, even if we look at just this one image and we can look at a lot more if we need to, there are things around this that are definitely talc plates, right? You're not claiming that's all chrysotile, these rounded structures, right?

A. No, of course not.

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Q. And so, we see the same kind of red edge effect because of your imaging on the talc plates also, right?
A. We have to get it in the same orientation but some do, some don't.
Q. And I asked you about that initially before you started relying on the edge effects to call fibers chrysotile, I asked you about these edge effects and you told me that when you see them on particles, you don't know whether they were just an artifact or not, correct?
A. When was that?
Q. That was in your Eagles deposition.
A. Then that must be correct.
Q. Okay. And I asked you whether these red edges were an artifact and you said maybe, and you would have to check if your focus was off, right?
A. Yes.
Q. And so if we go back to 51, for example, I've already got it up, if you're claiming to see some sort of edge effect here that you're basing your purple color on but it's an artifact, then your entire analysis is wrong?
A. No, this analysis is not wrong. This

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is chrysotile and I would need to be looking at the microscope here. I stand by this. It's not wrong. And we'll get to that more tomorrow, I guess.
Q. Well, slide 55, as you pointed out, that if this edge effect that you're basing calling this color, this purple, if that's just an artifact of the image and not what you need to be focusing on for dispersion staining, then when you do this calculation, you're putting the wrong number in there, it should be the number corresponding to the yellow?
A. That is not yellow and, you know, if it's this, if it's that. You know, chrysotile, the birefringence can get as high as 0.017. So, it is not wrong.
Q. Okay. So, I'm going to move now to talking about illumination in your Valadez work.
MR. DUBIN: Your Honor, I don't know if you prefer me to stop now and pick up after lunch or go on for a little bit, I'm happy either way.
THE COURT: Do you have any preference, Dr. Longo?
THE WITNESS: Probably might be a good time to break for lunch.
THE COURT: All right.

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THE WITNESS: Thank you.
THE COURT: Let's meet everyone back here no later than five of one. We're off the record.
(Luncheon recess: 11:54 a.m. to 12:58 p.m., Eastern Standard Time.)

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A F T E R N O O N S E S S I O N
THE COURT: We're back on the record.
BY MR. DUBIN:
Q. So, just to back up two slides in order to make sure we're staying in flow and understand where we are, if we could back up to slide 51, please.
So, we were talking about the characterization of the colors, which is the first step in the analysis that drives the RI values, everything that's going to go into the calculation. And we were talking about whether this particle that we're seeing here on screen is or is not truly purple, okay, and that's one of the things we were just talking about a moment ago.
And then if we see again slide 55, we know and we're going to talk a little bit about the birefringence formula and how you reached the conclusion that things are chrysotile, but, for example, this first input in the birefringence formula, if you say that this particle is purple, then the value for purple goes into that first step, right?
A. Well, I'm not calling it purple. I'm just calling it the color that we find in that

CERTIFICATE OF OFFICER

I CERTIFY that the foregoing is a true and accurate transcript of the testimony and proceedings as reported stenographically by me at the time, place and on the date as hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney or counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.

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